

Application No. : 10/666,580
Filed : September 17, 2003

IN THE CLAIMS

5 Please cancel Claims 11-18, 23-25 without prejudice, withdraw Claims 7-9, and add new Claims 27-35 as follows:

1. (Original) An inductive device, comprising:
a magnetically permeable core having a gap formed therein;
10 at least one winding disposed proximate to said core;
a magnetically permeable element disposed at least partially within said gap; and
an insulator disposed proximate to said magnetically permeable element;
wherein said permeable element, core, and insulator cooperate to provide a
desired inductance characteristic as a function of current.

15 2. (Original) The inductive device of Claim 1, wherein said magnetically permeable element comprises an alloy of metals.

3. (Original) The inductive device of Claim 1, wherein said winding is disposed at a prescribed distance from said gap.

20 4. (Original) The inductive device of Claim 1, wherein said gap comprises a substantially "V" shape.

5. (Original) The inductive device of Claim 1, wherein said inductance characteristic comprises an inductance value associated with a first condition which is substantially larger than the value associated with a second condition.

25 6. (Original) The inductive device of Claim 5, wherein said device is adapted for use in a telecommunications circuit, and said first condition comprises an "on-hook" current, and said second condition comprises an "off-hook" current.

7. (Withdrawn) A method of manufacturing a controlled inductance device, comprising:

30 providing a magnetically permeable toroid core having a gap extending through at least a portion thereof, said gap having sidewalls associated therewith;
winding a plurality of conductive turns around said core;
disposing a magnetically permeable element at least partially within said gap; and

disposing an insulating element within said magnetically permeable element such that said permeable element physically contacts said core.

8. (Withdrawn) The method of Claim 7, wherein said acts of disposing comprising said permeable element and insulating element, respectively, to a predetermined depth within said gap, said predetermined depth being related at least in part to said controlled inductance.

9. (Withdrawn) A method of manufacturing a controlled inductance toroid, comprising:

providing a magnetically permeable toroid core having a gap formed therein;
winding at least one wind of conductive material around said core, said winding disposed at least a predetermined distance from said gap;

providing a thin sheet of magnetically permeable material;
folding said sheet of magnetically permeable material at least once;
disposing between at least one fold of said magnetically permeable material at least one insulating element such that said insulating element prevents electrical contact at least portions of said sheet; and

disposing said folded sheet and at least one insulating element at least partially within said gap, such that portions of said sheet physically contact said core.

10. (Original) An inductive device, comprising:
a magnetically permeable toroidal core having a gap formed therein;
at least one winding wound around at least a portion of said core; and
means for magnetically bridging said gap, said means for bridging cooperating with said core and at least one winding to provide a desired inductance characteristic for said device during operation thereof in a circuit.

11. - 18. (Canceled)

19. (Original) An inductive device adapted for use in a telecommunications circuit, said device having a controlled inductance characteristic, comprising:

a magnetically permeable toroidal core having one gap formed therein
at least one winding wound on said core; and

at least one magnetically permeable element adapted to bridge at least a portion of said gap;

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wherein said inductance characteristic comprises an inductance value associated with an “on-hook” current is substantially larger than the inductance value associated with an “off-hook” current.

20. (Original) The device of Claim 19, wherein:

5 said at least one element is formed of a magnetically permeable material and in a first predetermined configuration; and

said gap is formed in a second predetermined configuration;

said first and second predetermined configurations and said material cooperating to provide said inductance characteristic.

10 21. (Original) The device of Claim 20, wherein said first predetermined configuration comprises a reduced cross-sectional area of said element, and said second predetermined configuration comprises a particular gap width and shape.

22. (Original) A telecommunications device having:

a first port for interfacing with an outside telephone line;

15 a second port for transferring first signals between said first port and a first user device;

a third port for transferring second signals between said first port and a second user device;

and

a filter circuit, said filter circuit being adapted to selectively block said first signals from being transferred to said second port, said filter circuit comprising at least one toroidal core device
20 having an inductance characteristic.

wherein said inductance characteristic comprises an inductance value associated with an “on-hook” current is substantially larger than the inductance value associated with an “off-hook” current.

23. -25. (Canceled)

25 26. (Original) A controlled induction electronic device, comprising:

a substantially toroidal core having a gap formed therein;

at least one permeable element having first and second regions and being disposed substantially across said gap, said first and second region being in direct physical contact with respective portions of said core on either side of said gap;

30 a coating covering substantially all of said core and said at least one element; and
at least one winding disposed around said core and substantially atop said coating.

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27. (New) An inductive device, comprising:
a substantially toroidal core having a gap formed therein, said gap extending at least partly
through the thickness of said core;
a quantity of a first material, said first material adapted to change at least one physical
5 property upon application of a stimulus;
a magnetically permeable element adapted to bridge at least a portion of said gap; and
said first material, said permeable element, and said core are proximate one another in such
fashion that when said stimulus is applied, said permeable element is brought into close cooperation
with said core.

10 28. (New) The inductive device of Claim 27, wherein said first material is a heat-
reactive tubing, said heat-reactive tubing changing in at least one physical dimension in response to
said stimulus.

29. (New) The inductive device of Claim 28, wherein said permeable element
comprises a sheet of alloy-based material, said sheet being configured to conform substantially to a
15 portion of a periphery region of said gap during said application of said stimulus.

30. (New) An inductive device, comprising:
a substantially toroidal core having a gap formed therein, said gap extending at least partly
through a thickness of said core;
a quantity of responsive material, said material adapted to change at least one physical
20 property upon application of a stimulus; and
a magnetically permeable element adapted to bridge at least a portion of said gap, wherein
said permeable element and said core are proximate one another and substantially within a volume
formed by said responsive material;
wherein said responsive material, in response to said stimulus, forces said permeable
25 material into communication with said core, thereby bridging said gap.

31. (New) The inductive device of Claim 30, further comprising:
a first substantially insulating coating covering at least portions of the surface of said
device; and
a plurality of turns of a conductor disposed around said core and substantially atop said
30 coating.

32. (New) The inductive device of Claim 31, further comprising:

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a second substantially insulating coating, wherein said second coating coats at least a portion of said device and at least a portion of said plurality of turns.

33. (New) A controlled induction electronic device, comprising:

a substantially toroidal core having a gap formed therein;

5 a permeable gap-bridging element, wherein said element is disposed substantially across said gap;

a first coating, said first coating substantially coating said core and said element; and

a plurality of conductor turns on said core.

34. (New) The controlled induction electronic device of Claim 33, wherein at least
10 portions of said element are in direct physical contact with respective sides of said core proximate said gap; and

said element and said core are substantially fixed in position relative to one another.

35. (New) The controlled induction electronic device of Claim 34, wherein said first
coating comprises parylene applied using at least one of a vacuum or vapor deposition process.

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